Early Childhood Longitudinal Study, Birth Cohort: Combined Kindergarten-1st Grade Field Test (ECLS-B, K-1 Field Test) Field Test Report #3

School Data Collection and Teacher Questionnaire

April 2006

Project No. 08116.013

Jean Lennon

Conducted by
RTI International
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Research Triangle Park, NC 27709

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1. Introduction

One of the unique aspects of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) kindergarten round is that the majority of the sample children will enter formal school settings for the first time. Thus, one of the primary goals of this round is to measure children's experiences as they make this transition into school, and to connect these experiences with child characteristics and experiences in the years leading up to kindergarten. Two important sources of information on a child's school experiences are the child's teacher and the child's school administrator. The ECLS-B Combined Kindergarten-1st Grade (ECLS-B K-1) Field Test evaluated two instruments new to the ECLS-B: the Teacher Self-administered Questionnaire (TSAQ), which is a short paper-and-pencil measure; and the School Administrator Self-administered Questionnaire, a very brief paper-and-pencil measure. Rather than fielding the School Administrator SAQ (SASAQ), however, the field test evaluated how well these data could be obtained from existing national school databases. This report presents the results of the field test regarding the performance of these new measures, including analysis of content and mode, and makes recommendations for the kindergarten national study.

2. School Data Collection

Initially, two options were considered when designing the school administrator data collection for the field test. The first was a self-administered questionnaire to be mailed along with the materials sent to administrators when they were contacted about having a study child in one or more of their classrooms. The SASAQ would be brief, approximately 12 items, and would ask for school-level data on attendance rates, delinquency, racial composition, number of students, school type, and grade levels. (See section 2.3 for complete information on data elements.)

Ultimately, to minimize burden on the schools, the National Center for Education Statistics (NCES) decided to investigate how well the study's data needs could be met by using publicly available datasets. The field test explored use of the Common Core of Data (CCD) for coverage of public schools and the Private School Universe Survey (PSS) for coverage of private schools. Below we present an analysis of how well these datasets met the data needs of the field test, discuss the advantages and disadvantages of each approach (SAQ versus database), and make recommendations for the national study.

2.1 Ability to Identify Field Test Schools in CCD and PSS

The K-1 Field Test parent instrument included a school identifier feature built into the computer-assisted personal interview (CAPI). The lookup table of schools was based on the 2002/2003 CCD dataset and the PSS dataset used was supplied via e-mail by the PSS project officer on July 28, 2005 (date of dataset not given). Parents were asked to report the name of their child's current school. The field interviewers then typed in the initial letters of the school name, and a short list of possible matches came up. Parents were then asked to verify the school's name and address to confirm that the interviewer had selected the correct school from the lookup table.

A total of 296 parent interviews were completed, and 250 children were reported to be attending kindergarten or first grade. Seven of those cases were twin cases, so a total of 243

schools needed to be found in the school lookup table. Of those 243 schools, 219 (90 percent) were coded properly by the interviewer. In the other 24 cases, the interviewer did not locate the child's school in the database. A breakdown of the reasons these 24 schools were not coded, including proposed solutions to these problems for the national study, is found in table 1.

Table 1. Problems and proposed solutions in identifying field test schools

Reason for missing data	Number of problem cases	Percent of problem cases	Proposed solution
Total	24	100.00	
School in state not loaded into field test instrument	7	29.17	Load all 50 states into national instrument
Interviewer error	7	29.17	Training
School does not exist in database	4	16.67	Search the Web for a school-specific site
School had been added to database since version used for field test	3	12.50	Use most recent version
School had recent name change	2	8.33	Training
Respondent gave incomplete school name	1	4.17	Training

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), Combined Kindergarten-1st Grade Field Test.

Most of the sources of missing data experienced in the field test can be eliminated in the national study. The national study instrument will have data for all 50 states loaded into the school lookup database. Interviewer error and incomplete information from the respondent can both be reduced through additional interviewer training. The other remaining sources of missing data in the field test were schools not found in the database, either because they had been added since the version used in the field was created, or because they are not part of the CCD or PSS. In our field test sample, this type of problem occurred in only 7 of 243 of cases (3 percent) where a child was enrolled in school.

2.2 Dataset Coverage of Study's Variables of Interest

We can conclude from analysis of the field test data that a great majority of schools can be successfully identified through use of the school lookup database by field staff. The next question must be to what extent the information contained in the publicly available datasets meets the data needs of the ECLS-B. We did not analyze the school-level data associated with cases in the field test. Instead, we conducted analyses more pertinent to the design of the national study, namely what percentage of all schools report the data of interest through the CCD and PSS, and how that reporting varies by variable type. Table 2 displays the list of target variables and whether those variables are available in either the CCD or PSS. The target variables were taken from the draft school administrator SAQ provided to RTI by NCES in October 2004 and matched to the 2003/2004 CCD and PSS datasets. (Please see attachment 1 for the School Administrator SAQ.) These are the most recently available versions of the CCD and PSS and will be the versions loaded into the school lookup table for the kindergarten national study. Once the ECLS-B Kindergarten '06 data have been collected, we will again obtain the versions of the CCD and PSS that are the most recently available and use those in the creation of our final dataset.

Table 2. Availability of ECLS-B school administrative variables in the CCD and PSS

Item	Available in CCD	Available in PSS
Average daily attendance	N	N
Total number of students in school	Y	Y
Grade levels in school		Lowest and highest
Ungraded	Y	
Programs for special needs children	N	
Prekindergarten	Y	
Kindergarten	Y	
1st	Y	
2nd	Y	
3rd	Y	
4th	Y	
5th	Y	
6th	Y	
7th	Y	
8th	Y	
9th	Y	
10th	Y	
11th	Y	
12th	Y	
School is public	Y	n/a
Public school type (e.g., regular, magnet, charter, etc.)		
Regular	Y	n/a
Magnet	Y	n/a
Charter	Y	n/a
School of choice	N	n/a
Bureau of Indian Affairs/tribal	N[1]	n/a
Special Education	Y	n/a
Early Childhood Center	N	n/a
Private school type:		
Catholic/diocesan/parish/private order	n/a	Y[2]
Other religious	n/a	Y
Accredited by NAIS	n/a	N
Other private	n/a	Y
Special Education	n/a	Y
Early Childhood Center	n/a	Y
Racial composition of school	Y	Y
Number of children in school	Y	Y
Start and end dates of school year	N	Number of days in school year
Number eligible for free lunch	Y	N
Number eligible for reduced-price lunch	Y	N
School received Title I funds	Eligibility only	N
Targeted assistance Title I program	N	N
School-wide Title I program	Y	N
Delinquency rates (e.g., incidences of weapons, fighting, drugs, vandalism)	N	N

[1]This information is currently available through the Bureau of Indian Affairs Website (http://www.oiep.bia.edu/).

[2] The PSS only reports whether schools are Catholic.

NOTE: CCD = Common Core of Data; PSS = Private School Universe Survey; NAIS = National Association of Independent Schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), Combined Kindergarten-1st Grade Field Test, and the CCD Common Core of Data and PSS Private School Universe Survey data for the 2003–2004 school year.

Overall, a significant number of the target variables were available for both public and private schools. Both datasets provided information on total number of students in school, grade levels, and some school type information. Several more variables were available for public

schools. These included number of students eligible for free and reduced-price lunch, and presence of a school-wide Title I program. The variables that would have to be dropped from the study were we to choose the database approach include attendance and delinquency rates, and whether the school has a targeted Title I assistance program.

The next level of analysis involved establishing the extent to which those target variables included in the CCD and PSS had missing values. One important consideration to be kept in mind when evaluating the missing data was that school administrators were the source of that data, just as they would be the source for the data reported in the SASAQ. There is no reason to believe that administrators would respond more thoroughly to our SAQ than they do to the CCD or PSS studies.

Tables 3 and 4 display information on the percentage of missing values for the school type and federal assistance items for public (CCD) and private (PSS) schools. The variables with 10 percent or more missing in the CCD were magnet school type, eligibility for free lunch, and eligibility for reduced-price lunch. No school type variables had any significant amount of missing data for private schools.

Table 3. Percentage missing on school type and federal assistance variables in the CCD

School type and assistance eligibility	Frequency	Percent
Total	56,819	100.00
Regular school	1,625	2.86
Magnet school	6,033	10.62
Charter school	0	0.00
Special Education school	187	0.33
Title I eligible	2,104	3.70
School-wide Title I program	2,108	3.71
Number eligible for free lunch	9,702	17.08
Number eligible for reduced-price lunch	9,702	17.08

NOTE: CCD = Common Core of Data.
SOURCE: CCD Common Core of Data for the 2003–2004 school year.

Table 4. Percentage missing on school type variables in the PSS

School type	Frequency	Percent
Total	25,931	100.00
Catholic	92	0.35
Other private	92	0.35
Special education	18	0.07
Early Childhood Center	30	0.12

NOTE: PSS = Private School Universe Survey.
SOURCE: PSS Private School Universe Survey data for the 2003–2004 school year.

Table 5 displays information on the percentage of missing values for the racial composition items in both the CCD and PSS. Percentage missing across racial categories was approximately equal within the two datasets. A higher percentage of private schools than public schools did not report racial composition.

Table 5. Percentage missing on school racial composition variables in the CCD and PSS

	CCD		PSS	
Race	Frequency	Percent	Frequency	Percent
Total	56,819	100.00	25,931	100.00
American Indian/Alaska Native	2,324	4.09	3,916	15.10
Asian	2,324	4.09	3,052	11.77
Hispanic	2,324	4.09	2,831	10.92
Black, not Hispanic	2,324	4.09	2,916	11.25
White, not Hispanic	2,326	4.09	2,864	11.04
Other	2,324	4.09	n/a	n/a
Total enrollment	1,356	2.39	392	1.51

NOTE: CCD = Common Core of Data; PSS = Private School Universe Survey.
SOURCE: CCD Common Core of Data and PSS Private School Universe Survey data for the 2003–2004 school year.

2.3 Recommendations for the National Study

We have examined the extent to which schools can be successfully identified by interviewers in the field and publicly available datasets can meet the study's data needs. We summarize in table 6 the advantages and disadvantages of the SAQ and database approaches to collecting school-level administrative data in the kindergarten national study.

Table 6. Advantages and disadvantages of SAQ and database approaches to school data collection

	Advantages	Disadvantages
SAQ	▪ Schools not limited to those included in CCD and PSS ▪ Data not limited to that collected by CCD and PSS	▪ Response rate may be poor ▪ Responses may be incomplete ▪ Increased burden on schools ▪ Potentially more expensive
Database	▪ Not dependent on response from administrators ▪ May get more complete data ▪ Decreased burden on schools ▪ Potentially less expensive	▪ Limited to schools included in CCD and PSS ▪ Limited to variables included in CCD and PSS

NOTE: CCD = Common Core of Data; PSS = Private School Universe Survey; SAQ Self-administered Questionnaire.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), Combined Kindergarten-1st Grade Field Test.

After consideration of the advantages and disadvantages of each approach, RTI recommends use of the database approach. This approach has a number of advantages and only two main disadvantages: limited schools in the datasets and limited variables of interest. The field test experience suggests that this first disadvantage is negligible. Only 3 percent of cases reported schools not found in the CCD or PSS. Even if one assumes that there will be twice as many such cases in the national study, the response rate will still be equivalent to 94 percent on a school administrator questionnaire, which would be ideal. In this small number of cases, RTI can conduct Internet searches for those schools. If school Web sites do not report the data we are interested in, we could consider mailing an SAQ. Given the small number of cases anticipated, RTI does not recommend a telephone administration of the SAQ due to cost. If NCES decides that the database approach should be used for the kindergarten national study, RTI will further investigate ways to compensate for this small lack of school coverage.

The second disadvantage of the database approach is more related to study design, in that a few variables of interest to the study would need to be dropped. This may be a reasonable trade-off; however, as it is possible that we will be able to collect more complete data on those variables that are part of CCD and PSS than we would if we relied on an SAQ. Administrators may not be willing to complete a SAQ when they may only have one study child in their school. Administrators may also be more likely to require that the ECLS-B pursue district-level approval for the study if burden is placed on them directly. Obtaining district-level approval negatively impacts response rate, increases staff labor, and incurs other associated costs such as application fees.

3. Teacher Self-administered Questionnaire (TSAQ)

The ECLS-B K-1 Field Test included a paper-and-pencil instrument which was mailed to the teachers of children enrolled in either kindergarten or first grade. Since many of the questionnaire items had been fielded previously in the ECLS-K Teacher SAQ, it was reasonable to assume that items would work well for this sample. However, field test data were reviewed to assess performance of the instrument on both content and clarity of skip instructions. Analyses were based on data from the first 125 TSAQs returned to RTI out of the 201 TSAQs mailed during the field period. The following sections include an overview of how the instrument performed, the data analyses conducted, and recommendations for national implementation.

3.1 Performance of Instrument

Several types of analyses were conducted on the field test data. First, we examined the number of incomplete TSAQs received, especially those that had complete responses through the halfway point (Q24), but then lacked responses for the items in later portions of the instrument. Assuming that items towards the end of the TSAQ were not difficult or sensitive, such a response pattern would indicate that respondents found the instrument to be too long and lost interest before completing it. No such pattern was found. Analyses related to respondent comprehension of the instrument are discussed below.

3.1.1 Indicators of Respondent Comprehension and Ability to Respond

Various indicators were reviewed to assess respondent comprehension. The responses for each question were reviewed with particular attention paid to missing responses, inappropriate or out-of-range responses, adherence to skip patterns, and variability within the responses when appropriate. Review of the data suggests respondents were able to easily navigate through the questionnaire and follow the skip patterns. Out-of-range responses were rarely found and good variability was present in scaled items.

One of the main concerns with the current Teacher Survey design has been the impact of the timing on teachers' abilities to rate aspects of the child and classroom. Teachers will start receiving these questionnaires approximately 4 weeks into the school year. To measure how comfortable teachers were with answering certain types of questions at that relatively early point in the school year, an item was added to the field test TSAQ.

> *51. In an effort to improve our questionnaire, we are asking for your comments on how easy it was to answer some of the items above* ***at this point in the school year****. Please*

rate the following groups of items according to how confident you were in your ability to answer the questions. How about items concerning…

a. the child's social development

b. the child's academic abilities

c. the social development of other children in the classroom

d. the academic abilities of other children in the classroom

e. the types of activities that typically occur in your classroom

f. the frequency of activities that typically occur in your classroom

The response scale was "very confident," "somewhat confident," and "cannot answer well at this point." Responses were analyzed taking into account time of receipt, and no apparent relationship was discovered, as shown in table 7. Across the three months of data collection, almost all teachers reported being very or somewhat confident in their responses. On average, 70 percent of teachers were very confident in their ability to respond to all six of the item types listed. Only 5 percent or fewer reported they "could not answer well at this point" items in the first five categories above. The area teachers were least comfortable reporting on was the frequency of activities that occur in the classroom, with only 54 percent reporting being "very confident," 30 percent "somewhat confident," and 9 percent "could not answer well at this point." We do not recommend any changes to the instrument content based on these results.

Table 7. Teachers' level of confidence in responses by type and month

Response type	Level of confidence	November (N=26)		December (N=49)		January (N=48)	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Child's social development	Total	25	100.00	49	100.00	47	100.00
	Very confident	18	72.00	38	77.55	42	89.36
	Somewhat confident	7	28.00	11	22.45	5	10.64
	Can not answer well at this point	0	0.00	0	0.00	0	0.00
Child's academic abilities	Total	26	100.00	48	100.00	46	100.00
	Very confident	15	57.69	40	83.33	41	89.13
	Somewhat confident	8	30.77	6	12.50	4	8.70
	Can not answer well at this point	3	11.54	2	4.17	1	2.17
Other children's academic abilities	Total	26	100.00	48	100.00	46	100.00
	Very confident	15	57.69	35	72.92	37	80.43
	Somewhat confident	9	34.62	11	22.92	8	17.39
	Can not answer well at this point	2	7.69	2	4.17	1	2.17

See notes at end of table.

Table 7. Teachers' level of confidence in responses by type and month—Continued

Response type	Level of confidence	November (N=26)		December (N=49)		January (N=48)	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Types of class-room activities	Total	25	100.00	49	100.00	46	100.00
	Very confident	19	76.00	37	75.51	36	78.26
	Somewhat confident	5	20.00	11	22.45	6	13.04
	Can not answer well at this point	1	4.00	1	2.04	4	8.70
Frequency of class-room activities	Total	25	100.00	46	100.00	44	100.00
	Very confident	15	60.00	28	60.87	25	56.82
	Somewhat confident	8	32.00	16	34.78	13	29.55
	Can not answer well at this point	2	8.00	2	4.35	6	13.64

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), Combined Kindergarten-1st Grade Field Test.

3.2 Preference for Web Administration

One of the field test goals related to the Teacher SAQ was to evaluate teacher preference for a Web instrument over a paper-and-pencil measure. The field test TSAQ included items asking teachers whether they had Internet access, and if so, whether they would have preferred to complete the questionnaire via the Internet. The vast majority (96 percent) indicated that they have Internet access. Of those, 44 percent indicated they would have preferred to answer the questionnaire via the Internet. This finding would support the recommendation in Field Test Report #2: School Contact and Teacher Survey Methodology to continue with a mail survey methodology.

3.3 Recommendations for the National Study

Table 8 presents recommendations for instrument modifications for the kindergarten national study. (See attachment 2 for a copy of the Teacher SAQ.)

Table 8. Recommendations for changes to Teacher SAQ

Item number	Problem	Recommendation	NCES Response
Q2a-f	Low response rates for many of the sub-items	Drop the item. School- and grade-level data for this item can be collected from the administrator or CCD and PSS. If item is retained, make explicit that respondents should enter "0" for each item that does not apply.	Since we cannot get these data from extant databases, we believe we need to keep this item and make it explicit that respondents should enter "NA."
Q8	No variability (95 percent respond 5 days per week)	Drop the item. The ECLS-K found that 96 percent of programs met 5 days per week.	Confirm with TRP and check ECLS-K data to be sure there aren't K programs that meet less than 5 times a week . . . or more than 5 times a week. [RTI, 4/3/06: The TRP is currently reviewing the TSAQ.]
Q16a	Half-day morning programs may serve breakfast, not lunch	Add check box: CHECK HERE IF YOU DO NOT SERVE LUNCH	Good idea, please add.
Q31a-e	Approximately 10 percent missing on these items	Add check box: CHECK HERE IF YOU DO NOT USE ANY TYPE OF ASSESSMENT	Good idea, please add.
Q35	The number of respondents who skipped both Q35 and Q36 was inconsistent.	Add skip instruction so respondents who check the box at Q35 skip to Q37.	The skip instruction is there, but very unclear. Make more clear/explicit.
Q43	Approximately 17 percent missing on this item	Reduce respondent burden by providing checklist of years and list years as ranges: ▪ Less than 1 year ▪ 1-2 years ▪ 3-5 years ▪ 6-10 years ▪ 11-15 years ▪ 16-20 years ▪ 20 years or more	Good idea – how does this compare to how the ECLS-K collected these data? [RTI, 4/3/06: The ECLS-K did not collect this data with ranges. In addition, they asked teachers to report years to the nearest half.]

See notes at end of table.

Table 8. Recommendations for changes to Teacher SAQ—Continued

Item number	Problem	Recommendation	NCES Response
General	A small number of respondents in Montessori schools contacted RTI to indicate they had difficulty responding to items asking for number of minutes per day spent on different activities	Add intro text to such items: For some programs, time spent on individual activities may vary by day or by child. Please provide your best estimate. Add check box to such items: CHECK HERE IF MONTESSORI PROGRAM	Good idea, please make this change.
General	The first national study Teacher SAQs will be fielded earlier in the school year than the first field test TSAQs were (at around 4 weeks versus 8 to 10 in the field test). This raises the likelihood that teachers will not be able to answer some items dependent on amount of time spent with child and classroom. (See section 3.1.1 for more information.)	Hold mailing of TSAQ until child has been in school for a minimum of 8 weeks. (Parent Interview already has an item asking for number of weeks since child started school.)	This is a reasonable plan of action.
General	Translation into Spanish	We have not found any indication that the ECLS-K Teacher SAQ was translated into Spanish, and it was not part of this contract's Statement of Work. We do not believe a Spanish version will be necessary and recommend against translating this instrument.	Agreed.

NOTE: CCD = Common Core of Data; PSS = Private School Universe Survey; SAQ Self-administered Questionnaire; TSAQ Teacher Self-administered Questionnaire.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), Combined Kindergarten-1st Grade Field Test.